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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,244	02/10/2005	Charles Perkins	03-19 US	4660
23693	7590	03/13/2006	EXAMINER	
Varian Inc. Legal Department 3120 Hansen Way D-102 Palo Alto, CA 94304			CHRISTENSEN, RYAN S	
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DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/524,244	Applicant(s) PERKINS ET AL. 	
	Examiner Ryan Christensen	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/10/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 38, 50, 236. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by

the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 60. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

5. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.
6. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).
7. Claims 1-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of

copending Application No. 10/524,283 in view of U.S. Patent 6,014,892. This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3, 5, 6, 9, 10, 11, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,014,892 (Baret et al.). With respect to claim 1, Baret et al. disclose a first sealable chamber (16, Fig. 4) configured to receive a test piece (19, Fig. 4) containing a trace gas (Col. 4 lines 35-37); a second sealable chamber (18, Fig. 4); a first valve coupled between the first and second chambers (8, Fig. 4); a leak detector (Col. 2 line 59 to Col. 3 line 7) having a test port (Fig. 4); a trace gas permeable member (11, Fig. 4 and Col. 3, lines 21-27) coupled between the second chamber (18, Fig. 4) and the test port (Fig. 4) of the leak detector; a vacuum pump (3, Fig. 4) having an inlet (Fig. 4); and a second valve (17, Fig. 4) coupled between the second chamber and the inlet of the vacuum pump (Fig. 4).
10. With respect to claim 3, Baret et al. disclose the permeable member is permeable to helium (Col. 3, lines 21-21 and Col. 3, line 1).

11. With respect to claim 5, Baret et al. disclose a first sealable chamber (16, Fig. 4) configured to receive a test piece (19, Fig. 4) containing a trace gas (Col. 4 lines 35-37); a second sealable chamber (18, Fig. 4); a first valve (8, Fig. 4) coupled between the first and second chambers (Fig. 4); a leak detector (Col. 2 line 59 to Col. 3 line 7) including a test port (Fig. 4) and a vacuum pump (3, Fig. 4); a second valve (5, Fig. 4) coupled between the second chamber and the test port of the leak detector (Fig. 4); a trace gas permeable member (11, Fig. 4, and Col. 3, lines 21-27) coupled between the second chamber and the test port of leak detector (Fig. 4).
12. With respect to claim 6, Baret et al. disclose the second valve (5) is closed at relatively high pressures in the second chamber and wherein the second valve is open at relatively low pressures in the second chamber (Col. 3, lines 32-61).
13. With respect to claim 9, Baret et al. disclose the permeable member is permeable to helium (Col. 3, lines 21-21 and Col. 3, line 1).
14. With respect to claim 10, Baret et al. disclose providing a first sealable chamber (16, Fig. 4), a second sealable chamber (18, Fig. 4) and a first valve coupled between the first and second chambers (8, Fig. 4); placing a test piece (19, Fig. 4) containing a trace gas (Col. 4 lines 35-37) in the first chamber (Fig. 4) with the first valve closed (Col. 4, 35-46); vacuum pumping the second chamber with the first valve closed (Col. 4, 42-46); opening the first valve, wherein gas in the first chamber expands into the second chamber (Col. 4, lines 47-49); providing a trace gas permeable member coupled to the second chamber (11, and Col. 4

- lines 49-53); and detecting a leak in the test piece by sensing the trace gas that passed through the permeable member (Col. 4 lines 49-53).
15. With respect to claim 11, Baret et al. disclose vacuum pumping the second chamber with the first valve open, and sensing the trace gas pumped from the second chamber to provide detection of small leaks (Col. 3 lines 41-52).
16. With respect to claim 15, Baret et al. disclose sensing the trace gas that passed through the permeable member comprises sensing the trace gas with a leak detector including a mass spectrometer (1, Fig. 4 and Col. 2 lines 59-62).
17. With respect to claim 16, Baret et al. discloses sensing the gas pumped from the second chamber comprises sensing the trace gas with a leak detector (Col. 2 lines 59-62).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
19. Claims 17, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,014,892 (Baret et al.) in view of U.S. Patent 5,625,141 (Mahoney). With respect to claim 17, Baret et al. disclose a first sealable chamber (16, Fig. 4) configured to receive a test piece (19, Fig. 4) containing a trace gas (Col. 4 lines 35-37); a second sealable chamber (18, Fig.

4); a first valve (8, Fig. 4) coupled between the first and second chambers (Fig. 4); a first leak detector (Col. 2 line 59 to Col. 3 line 7) including a test port (Fig. 4) and a vacuum pump (3, Fig. 4); a second valve (5, Fig. 4) coupled between the second chamber and the test port of the first leak detector (Fig. 4); a trace gas permeable member (11, Fig. 4, and Col. 3, lines 21-27) coupled between the second chamber and the test port of leak detector (Fig. 4). Baret et al. do not explicitly disclose a second leak detector having a test port. However, Mahoney et al. disclose a first (12) and a second (14) leak detector. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught in Baret with a second leak detector in order to reliably detect a very wide range of leak rates (Mahoney et al. Col. 3, lines 53-62).

20. With respect to claim 18, Baret et al. disclose the second valve is closed at relatively high pressures in the second chamber and wherein said second valve is open at relatively low pressures in the second chamber (Col. 3, lines 32-61).

21. With respect to claim 21, Baret et al. further disclose the permeable member is permeable to helium (Col. 3, lines 21-21 and Col. 3, line 1).

22. Claims 2, 4, 7, 8, 12, 13, 14, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,014,892 (Baret et al.) in view of U.S. Patent 5,625,141 (Mahoney) as applied to claim 17 above, and further in view of U.S. Patent 5,325,708 (De Simon).

23. With respect to claims 4, 7, 8, 12, 13, 19, 20 and 22, the combination of Baret et al. and Mahoney does not explicitly disclose the permeable member comprises a

quartz member, the apparatus further comprising a heating element in thermal contact with the quartz member and a controller configured to control the heating element, nor the trace gas permeability of the permeable member being controllable. De Simon discloses the permeable member comprises a quartz member (Col. 1, lines 30-37), the apparatus further comprising a heating element (8, Fig. 4) in thermal contact with the quartz member (Col. 2, lines 59-68) and a controller (33, Fig. 4) configured to control the heating element (Fig. 4). De Simon further discloses trace gas permeability of the permeable member being controllable (Col. 1, lines 30-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught by Baret et. al by making the membrane of quartz and providing a means for heating the membrane because quartz is well known in the art to be controllably permeable to helium, which is a well known trace gas (De Simon, Col. 1, lines 30-37).

24. With respect to claims 2, 14, and 22, the combination of Baret et al. and

Mahoney does not explicitly disclose an ion pump as a leak detector, or a second leak detector, and sensing the trace gas with an ion pump (leak detector) and monitoring ion pump current. However De Simon discloses using an ion pump as a leak detector and sensing the trace gas with an ion pump and monitoring ion pump current (Col. 1 lines 38-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught in Baret by including a ion pump as a leak detector, or a second leak detector, and sensing

the trace gas by monitoring the current of the ion pump because ion pump are known in the art for detecting helium (De Simon, Col. 1, lines 38-47).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pre-Grant Publication 2005/0199042 (Perkins et al.) is a commonly owned application with the current application.

U.S. Patent 4,918,975 (Voss) discloses leak detection with a trace gas such as helium with a membrane permeable to the trace gas.

U.S. Patent 3,951,827 (Hall) discloses an ion pump, a membrane permeable to trace gasses as well as a mass spectrometer for determining leaks of various sizes.

U.S. Patent 3,280,619 (Spies) discloses a leak detection system where the charge of an ion pump is used to determine the concentration of a tracer gas escaping an article.


26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Christensen whose telephone number is 571-272-2683. The examiner can normally be reached on Monday - Friday, 8am - 5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RSC


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